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Single crystal study on a dense Kondo antiferromagnet UCu_5In

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Single crystals of a medium-heavy fermion antiferromagnet UCu_5In (orthorhombic, CeCu_5Au type structure) have been investigated by means of magnetic susceptibility, magnetization, electrical resistivity, magnetoresistance, thermoelectric power and heat conductivity measurements, performed along the three principal crystallographic axes. Below $T_N = 25$ K, the magnetic, electrical and heat transport behavior exhibits a pronounced in-plane anisotropy, which clearly confirms a unique non-collinear antiferromagnetic structure of the compound, found by neutron diffraction. In the paramagnetic region, all the transport properties have a semimetallic character with well-defined Kondo-like features. The experimental findings are discussed in terms of the formation in UCu_5In of a quasiparticle ground state.